HORTICULTURAL SERIES NO. 617 DECEMBER 1990



# 1990
# VEGETABLE CROPS REPORT
# VARIETY TRIALS AND CULTURAL RESEARCH TESTS
# MUCK CROPS BRANCH



DEPARTMENT OF HORTICULTURE
THE OHIO STATE UNIVERSITY
OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
WOOSTER, OHIO 44691

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12/90/G-469/300

# GREEN LEAF LETTUCE CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch-OARDC**

Eight cultivars and lines of green leaf lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

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| April | 4.23 in | April | 51 | 65 | 38 |
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| Aug. | 5.28 in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 in | Sept. | 65 | 78 | 53 |

Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings. The following evaluations are based on these weather conditions.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: CB, Tiara.

## GREEN LEAF LETTUCE CULTIVAR RESULTS 1990

1. Slobolt (Harris-Moran) - Average head, very uniform, light green to yellow, very soft.

2. Royal Green (Abbott & Cobb) - Small heads, dark green, heads not uniform, good curl, grows upright and shows some seeders in spring, seeds fast in summer.

3. Waldmann's Green (All Sources) - Excellent head size, dark green color, upright growth, seeds fast in spring and summer.

4. CA (Central Valley) - Small heads, not uniform, dark green color, seeds early in spring. Seeds fast in summer.

5. CB (Central Valley) - Very curly leaves, dark green color, matures 7 to 10 days earlier than other entries. Growth habitat is upright. Shows no seeds spring or summer. (Has potential.)

6. Tiara (Asgrow) - Good size heads, good leaf curl, dark green color, does not bolt spring or summer, grows upright, large heads and best of leaf lettuce.

7. Enduro (Asgrow) - Curly leaves, good heads, some burn in heart. Uniform dark green color. Shows some seeders in summer, growth habitat is flat, not acceptable.

8. Baron (Royal Sluis) - Dark green color, growth is upright, seeds early. Not acceptable for spring or summer.

## GREEN LEAF LETTUCE VARIETY TRIAL 1990

| Variety | Source | Fresh Wt. (lb/crate) |
|---|---|---|
| Enduro | Asgrow | 21.25 |
| Slobolt | Harris-Moran | 23.12 |
| Royal Green | Abbott-Cobb | 20.46 |
| Tiara | Asgrow | 29.09 |
| CA | Central Valley | 16.13 |
| CB | Central Valley | 23.91 |
| Waldmann's Green | All Sources | 21.19 |
| Baron | Royal Sluis | 12.88 |
| LSD | | 5.37 |

## CENTRAL VALLEY SEED Co. LEAF LETTUCE FALL TRIAL 1990

| Cultivar | Fresh Wt. (lb/crate) | Comments |
|---|---|---|
| CC | 23.59 | Heads appear to be brittle, color is dark green, growth habit is upright. This would be an acceptable leaf lettuce. |
| CD | 23.33 | Heads are smaller than our current leaf lettuce, light green in color, leaves are flexible not brittle. Heads are heavy for their size. Growth habit is upright. Plant stand is not uniform. |
| CE | 29.25 | Head is large and heavy, growth habit is upright. Plants are dark green in color, leaves are very flexible, not brittle. Best green leaf we have seen yet. |
| CRA | 21.56 | Dark green in color, head is very loose and light weight. Seeds quickly in the fall. Not enough curl to the leaves. Not an acceptable red leaf lettuce. |
| LSD | .67 | |

# RED LEAF LETTUCE CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Thirteen cultivars and lines of red leaf lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred

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Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings. The following evaluations are based on these weather conditions.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: New Red Fire, Red Leaf 20, Red Head.

## RED LEAF LETTUCE CULTIVAR RESULTS 1990

1. SR322364 (Sun Seed) - Color dark bright red; large leaf with very little curl, doesn't show any sign of seeders. Looks like Orphan Anni.

2. Orphan Annie (Sun Seed) - Large leaf, smooth leaf with no curl. Dark shiny red, not a typical red leaf.

3. Aragon Red (Central Valley Seed) - Too flat of leaf, old red looking. Matures early and seeds quickly in the summer.

4. Royal Red (Stokes) - Bright red color, small uniform heads, seeds quickly in spring and summer.

5. MR 250 (Martin Rispens) - Heads not uniform, bright red color, some leaves are curly and some are not. Seeds quickly in summer.

6. New Red Fire (All Sources) - Bright red color, grows upright, very uniform heads, holds a long time without seeding. Best in trial! Color seems to lighten as it gets older, a lot of off types.

7. Lollo Rossa Axon (Martin Rispens) - Small heads, more a novelty lettuce (show only)

8. Red Prize (Ferry Morse) - Color light, mainly green. Acceptable head size and shape, seeds fast in summer or under stress.

9. Red Salad Bowl (Nunhems) - Leaves are too small and curly. Dark red in color, not a standard red leaf.

10. Red Leaf 20 (Pybas) - Bright shiny red color. Heads heavy and uniform. Uniform and upright growth, some off types present. Holds well in both spring and summer. (very promising as a spring lettuce)

11. Red Head (Asgrow) - Medium to light red color (acceptable), uniform stands, holds well in spring, seeds moderate in summer. Not a summer red leaf.

12. Vulcan (Seigers) - Uneven color, uneven heads, light head, go to seed in summer as well as spring. Does not hold up.

13. Red Sails (Buurma Farms) - Dark red, dull red, growth habitat is flat, brittle heads, ribs break easily. Holds well in spring and summer.

14. Garnet (FM) - More green than red, acceptable leaf curl, growth habitat is upright. Large upright heads, holds in spring not in summer.

## RED LEAF CULTIVAR EVALUATION 1990

| Cultivar Name | Source | Fresh Wt. (lb/crate) |
|---|---|---|
| Aragon Red | Central Valley | 17.54 |
| New Red Fire | Takii | 17.97 |
| SR322364 | Sun Seed | 18.64 |
| Vulcan | Siegers | 16.84 |
| Orphan Anni | Sun Seed | 23.33 |
| Red Head | Asgrow | 15.86 |
| Red Leaf 20 | Pybas | 16.68 |
| Royal Red | Stokes | 12.34 |
| Red Prize | FM | 15.46 |
| MR 250 | MR | 18.49 |
| Lollo Rosa Axon | MR | 6.46 |
| Red Prize | FM | 20.11 |
| Red Salad Bowl | Nenhems | 22.42 |
| Red Sails | Buurma Farms | 23.86 |
| Garnet | FM | 19.40 |
| LSD | | 3.49 |

# BOSTON CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Twenty-five cultivars and lines of Boston lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

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Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings. The following evaluations are based on these weather conditions.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: Boston = Tannex, Esmerelda, Mantilia, Orfeo, Captin Butter Crunch = SR324116, SR324119.

## BOSTON LEAF LETTUCE CULTIVAR RESULTS 1990

1. Sunre 2052 (Sun Seed) - No form in heads, seed stock shows quickly and does not resemble a boston, light green in color, looks like a spinach.

2. Tania (Harris-Moran) - Head not uniform and only a few heads formed, light green, burning in heads.

3. HMX 4552 (Harris-Moran) - Seeds early, bright color, large size heads and uneven heads. Light green in color.

4. HMX 7558 (Harris-Moran) - Never formed solid heads, too small, seeded before heads formed.

5. Dabora (Nunhem) - Too small of heads, not uniform, some heads mature/some not, light in color.

6. Summer Boston (Stokes) - Not uniform and small heads, never made size.

7. CC (Central Valley) - Heads not uniform, light color, looks like a cross between a boston and a butter crunch.

8. MR53 (Martin Rispens) - Small uneven heads and heads are not closing in. Seeds fast with no heads forming.

9. Mantilia (All Sources) - Forming large heads, uniform, light green color and shows a lot of potential. Looks best in summer trial, holds well.

10. Boston ZAA (Asgrow) - Small heads, not uniform, best of Asgrow lines. Seeds fast.

11. Tannex (Siegers) - Good heads, uniform and very light in color. Holds well, large heads, no internal burning. Looked good in spring and summer.

12. Esmerelda (All Sources) - Medium green in color. Excellent head size in spring, does not hold well in summer heat.

13. XP7013 (Asgrow) - Heads not uniform, and no potential.

14. XP5730 (Asgrow) - Large size heads, dark green color, not uniform, and too much leaf.

15. XP5731 (Asgrow) - Heads not uniform, leaves too close, does not resemble a boston and showing seeders fast.

16. XP5727 (Asgrow) - Did not form heads, not uniform, large heads and not good.

17. XP5729 (Asgrow) - Big/small heads, not uniform and uneven heads. Not a true boston.

18. Dark Green (Royal Sluis) - Dark green in color, large heads and seeds quickly.

19. Orfeo (Royal Sluis) - Large, maturing 1 week later, large heads, light green color and very uniform.

20. Jolara (Royal Sluis) - Lot of internal burning, very uniform heads, large heads, light green in color and holds well.

21. Atlanta (Royal Sluis) - Very light in color, large uniform heads, holds well.

22. Rigoletto (Royal Sluis) - Lot of internal burning, lot of bottom rot, light green in color and seeds quickly.

23. Divina (Siegers) - Not a true line, very uniform, large and small heads, matures late and light in color.

24. Captin (NK) - Very large heads, lots of external leaf, no internal burning, very uniform heads, light green in color. Holds well and shows potential.

25. Campan (NK) - Seeds quickly, large heads, lot of external leaves, light green in color. Possible early boston.

## BUTTER CRUNCH LETTUCE CULTIVAR RESULTS 1990

1. SR322396 (Sun Seed) - Heads not uniform, matures early, large size heads and dark green in color.

2. SR324116 (Sun Seed) - Large head, dark green color, an excellent butter crunch.

3. SR324119 (Sun Seed) - Dark green color, large heads, holds well and is best in trial.

4. CD (Central Valley) - Small butter crunch, seeds fast. Not large enough to be an acceptable butter crunch.

5. RS1000 Butter (Martin Rispens) - Heads not uniform, too small heads. Some heads will mature and some will not. Not a true line.

## BOSTON CULTIVAR EVALUATION 1990

| Cultivar | Source | Fresh Wt. (lb/crate) |
|---|---|---|
| Mantillia | Agway | 27.80 |
| Summer Boston | Stokes | 18.54 |
| Dabora | Nunhem | 26.58 |
| Tania | Harris-Moran | 25.02 |
| RS1000 Butter | MR | 22.60 |
| Tannex | Siegers | 25.03 |
| Boston | Asgrow | 24.84 |
| MR53 | MR | 20.82 |
| SR322396 | Sun Seed | 23.72 |
| Mantillia | Siegers | 18.36 |
| HM84552 | Harris-Moran | 21.47 |
| XP5727 | Asgrow | 20.96 |
| Esmerelda | Siegers | 21.80 |
| HMX7558 | Harris-Moran | 32.00 |
| CA | Central Valley | 24.42 |
| SR324116 | Sun Seed | 20.98 |
| Sunre 2052 | Sun Seed | 18.56 |
| SR324119 | Sun Seed | 18.56 |
| CB | Central Valley | 19.26 |
| Dark Green | Royal Sluis | 11.58 |
| Orfeo | Royal Sluis | 21.26 |
| Jobara | Royal Sluis | 20.04 |
| Atlanta | Royal Sluis | 17.85 |
| Rigoletto | Royal Sluis | 9.70 |
| Divina | Siegers | 13.38 |
| Captin | NK | 19.81 |
| Campan | NK | 22.04 |
| LSD | | 3.01 |

# RED BOSTON CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Nine cultivars and lines of Red Boston lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

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Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings. The following evaluations are based on these weather conditions.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: Red Butter, Red Boston, Caddo.

## RED BOSTON LETTUCE CULTIVAR RESULTS 1990

1. SR324112 (Sun Seed) - Light red in color and shows some promise for spring. Seeds fast in summer. Firm heads, small heads.

2. SR324111 (Sun Seed) - Light red in outer leaves, never formed heads. Not an acceptable boston.

3. HMX7554 (Harris-Moran) - Too small heads, light red color, uneven stand, head not firm, seeds fast in summer.

4. Red Boston (Stokes) - Dark red color, good size head, large heads, heads not uniform and most promising for spring, seeds fast in summer.

5. Maraville De Verano (Martin Rispens) - Good size heads, very little red, heads not uniform, uneven and loose heads. Seeds fast in summer.

6. Rouge Grenbloise (Martin Rispens) - Cross between boston and leaf lettuce, too green and not enough red. Not sure what it is.

7. Red Butter (Pybas) - Large uniform heads, light red color, heavy and firm heads. Holds in spring and summer without pushing seeds. (Best in trial, color may be the only thing holding it back.)

8. Canasta (NK) - More green than red in color, does not seed. Looks like a leaf lettuce.

9. Caddo (Royal Sluis) - Bright red in color, large heads, seeds early, does not hold, possible spring boston.

## RED BOSTON CULTIVAR EVALUATION 1990

| Cultivar | Source | Fresh Wt. (lbs/crate) |
|---|---|---|
| SR324112 | Sun Seed | 22.41 |
| HMX7554 | Harris-Moran | 23.16 |
| Red Boston | Stokes | 17.86 |
| Rouge Grenobloise | MR | 27.66 |
| Maravella De Verano | MR | 32.69 |
| Canasta | NK | 39.00 |
| Caddo | Royal Sluis | 25.73 |
| Red Butter | Pybas | 32.63 |
| LSD | | 3.77 |

# ROMAINE CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Twenty-nine cultivars and lines of romaine lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

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Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings. The following evaluations are based on these weather conditions.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: Green Tower, Tall Guzmaine, PSX 50886.

## ROMAINE CULTIVAR RESULTS SPRING PLANTING 1990

1. FLF70180 (Sun Seed) - Curly leaf, short, grows open, shows some burn, heads have no weight, seeds quickly in the summer.

2. SR324117 (Sun Seed) - Curly leaf, short, seeds in spring and summer, grows open and early maturing.

3. SR324118 (Sun Seed) - Very short, heavy heads, grows open and showing some seeders in spring, summer seeds quickly.

4. SUNRE 2050 (Sun Seed) - Heads close in, short, uneven heads, heavy heads, not uniform and little seeding in spring, seeds quickly in summer.

5. Green Tower (Harris Moran) - Heads close in, shows some seeders in spring, <u>not uniform</u> in size, tall heavy heads, seeds quickly in summer.

6. A (Central Valley Seed) - Early maturing, seeds early, very tall, heavy heads, closes in, shows promise as a spring romaine, in summer it seeds quickly.

7. B (Central Valley Seed) - Head closes in, some short and some tall, showing seeders early. Question part of breeding line. Seeds quickly in summer.

8. Parris Island Cos (Central Valley Seed) - Very uneven, no uniform heads, heads closed in, very tall, showing seeders spring and summer.

9. Parris Island 318 (Central Valley Seed) - Very tall, heavy heads, seeds spring and summer.

10. Ideal Cos (Martin Rispens) - Light green in color, tall, no weight to heads, head growth is closed, good size heads, seeds quickly spring and summer.

11. Major Cos (Martin Rispens) - Head growth close, heavy heads, tall, burn in leaves, internal browning and seeding badly both spring and summer.

12. Romulus Cos (Martin Rispens) - Heads grow open, tall, seeds quickly spring and summer.

13. Tall Guzmaine (All Sources) - Heads close in, tall, curly leaf, uniform heads, heavy heads, <u>holds well both spring and summer</u>.

14. PSX50886 (Peto Seed) - Heavy heads, heads close in and uniform tall heads. Matures late. <u>Holds well</u>. (Has potential)

15. PSX50182 (Peto Seed) - Not very uniform heads, tall heavy heads and heads close in. Seeds quickly in summer.

16. Parris Island Cos - Tall, heads close in, not uniform, and seeds quickly. (Asgrow)

17. Capri ZAA (Asgrow) - Heads close in, uneven heads, tall heads, looks good in spring, short in summer and seeds quickly.

18. Andros ZAA (Asgrow) - Short, heads close in, heavy, little seeding and uniform in spring. Seeds quickly in summer.

19. PSX50886 (Peto Seed) - Heads close in, uniform heads, matures late, holds well. (Has potential)

20. Plato (Peto Seed) - Short and heads grow open, burns easily and seeds quickly both spring and summer.

21. Rumulus (Peto Seed) - Heads grow open, tall, uneven heads and seeds quickly.

22. Valmaine (Stokes) - Not uniform heads, some heads close in and some open, short and rotting on bottom. Seeds early, shows a lot of internal burning.

23. XP5749 (Asgrow) - Not very uniform, head close in and good tight heads, promise for spring only. Seeds quickly in summer.

24. XP5491 (Asgrow) - Heads grow closed, big, tall, heavy heads, uniform, little seeding in spring, summer seeds quickly.

25. Pic Par Cos - (Royal Sluis) Tall heavy heads, growth inward and seeds quickly both spring and summer.

26. St. Blais Tacos - (Royal Sluis) Short small heads, grows inward and seeds quickly both spring and summer.

27. Corsica (Royal Sluis) - Tall light green heads, breaks down quickly, internal breakdown.

28. Romance (NK) - Extremely short, growth inward and seeds quickly both spring and summer.

29. Pic 318 (Royal Sluis) - Tall heavy heads, very uniform, seeds quickly in spring and summer.

## ROMAINE VARIETY TRIAL, 1990

| Variety Name | Source | Fresh Wt. lb/carton | Head Length in/head | Head Width in/head |
|---|---|---|---|---|
| FLF70180 | Sun Seed | 36.5 | 13.3* | 5.5 |
| SR324117 | Sun Seed | 35.5 | 10.2 | 5.6 |
| SR324118 | Sun Seed | 38.8 | 9.6 | 5.6 |
| Sunre 2050 | Sun Seed | 37.1 | 10.4 | 4.7 |
| Green Tower | Harris Moran | 42.5 | 11.7 | 5.9* |
| CA | Central Valley | 49.3* | 12.4* | 7.0 |
| CB | Central Valley | 44.5* | 12.2* | 5.6 |
| Parris Island | Central Valley | 49.2* | 12.0* | 5.8* |
| Parris Island | Stokes | 44.5* | 11.6 | 6.1* |
| Ideal Cos | M.R. | 36.6 | 12.1 | 6.2* |
| Major Cos | M.R. | 38.5 | 11.9* | 5.4 |
| Rumulus Cos | M.R. | 41.7 | 10.9 | 5.5 |
| Tall Guzmaine | M.R. | 40.0 | 10.7 | 5.5 |
| Tall Guzmaine | Pybas | 44.3* | 11.9* | 5.7 |
| PSX 50886 | Peto Seed | 47.6* | 12.0* | 6.3* |
| PSX 50182 | Peto Seed | 41.7 | 11.4 | 5.7 |
| Parris Island | Asgrow | 40.1 | 10.8 | 5.4 |
| Capri | Asgrow | 38.3 | 10.8 | 5.5 |
| Andros | Asgrow | 45.3* | 11.9* | 6.0* |
| PSX 50886 | Peto Seed | 44.1* | 12.3* | 5.7 |
| Plato | Peto Seed | 35.3 | 8.3 | 5.6 |
| Rumulus | Peto Seed | 44.8* | 10.8 | 5.5 |
| Valmaine | Stokes | 40.9 | 10.8 | 6.3* |
| XP5749 | Asgrow | 38.8 | 9.7 | 5.5 |
| XP5491 | Asgrow | 43.9* | 12.3* | 6.3* |
| Pic Parris | Royal Sluis | 30.9 | 11.4 | 5.7 |
| St. Blais Tacos | Royal Sluis | 35.2 | 11.4 | 6.9* |
| Pic 318 | Royal Sluis | 26.4 | 10.9 | 5.5 |
| Romance | NK | 21.7 | 10.3 | 5.2 |
| LSD | | 5.9 | 1.0 | .5 |

## RED ROMAINE CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Twenty-three cultivars and lines of red romaine lettuce were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were sown in Todd planter flats numbered 080A on April 9 (spring trial) and May 10 (summer trial). Standard greenhouse practices were employed in raising these plants. These lettuce plants were then transplanted on May 10 (spring trial), June 11 (summer trial) using a standard three-row Holland bare root transplanter. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Plots were 20 inches between rows (three rows) and 25 feet long. Each plot was replicated four times in a randomized complete block design. Plant spacing was ten inches with the middle ten plants of the center row used for harvest. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

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Additional weather information is available upon request.

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Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: Sweet Valentine.

## RED ROMAINE CULTIVAR RESULTS 1990

1. Majestic Red (Sun Seed) - Never formed a romaine head.
2. SR324113 (Sun Seed) - Dirty red color and no head formed.
3. Sweet Valentine (Pybas) - Tall, dark red, heavy heads, holds well in spring, summer seeds fast.

## RED ROMAINE CULTIVAR EVALUATION 1990

| Cultivar | Source | Fresh Wt. (lb/crate) |
|---|---|---|
| Majestic Red | Sun Seed | 29.93 |
| SR324113 | Sun Seed | 29.94 |
| Sweet Valentine | Pybas | 43.54 |
| LSD | | 3.09 |

# RADISH CULTIVAR EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

Richard Hassell
Muck Crops Branch/OARDC

Twenty-one cultivars and lines of radish were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were field sown on a monthly basis beginning in mid-April and ending the first of September. Seeding was done with a five-row Stan Hay precision drill at a tractor speed of 2 mph. During the spring planting seeds were spaced twelve seeds per foot;, summer planting, ten seeds per foot. Plots consisted of five rows, 150 feet long, 9 inches between rows. The inside middle rows were used for evaluation. Evaluations were done with grower help, as well as myself. Prior to spring planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly disked. Standard practices of weed and insect control were used and no serious problems occurred.

| Rainfall | | Air Temp | Avg. | Max | Min |
|---|---|---|---|---|---|
| April | 4.23 in | April | 51 | 65 | 38 |
| May | 6.87 in | May | 59 | 71 | 47 |
| June | 4.16 in | June | 72 | 85 | 60 |
| July | 7.39 in | July | 74 | 87 | 59 |
| Aug. | 5.28 in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 in | Sept. | 65 | 78 | 53 |

Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern in both plantings and should be noted when evaluating these results.

Certain cultivars and lines show sufficient promise to justify further trial under Ohio conditions. Included are: Summer Red, Belle Glade, Crunchy Red, NV 3255, Fuego, Cherreette.

## SUMMER RADISH CULTIVAR TRIALS 1990

| Cultivar | Source | Comments |
|---|---|---|
| Dandy | MR | Medium tops, a lot of red discoloration in center radish, diseases: fusarium yellow, rhizoctonia, light red, round radish. 70% field stand at harvest. |
| Summer Red | Royal Sluis | Short tops, uniform round radish, dark red in color, pure white centers, no disease resistance. Fusarium yellow, rhizoctonia, club root. 60% stand at harvest. |
| Rossy Red | MR | medium tops, large dark red radish, shape is oblong. Diseases: Fusarium yellow, Rhizoctonia. 21% stand ar harvest, red centers. |
| Improved Red Prince | Asgrow | Medium tops, matures late, medium round red radish, disease very little, Rhizoctonia present. |
| Red Pak | Stokes | Long tops, plant stand is uniform, radish is oblong and light red in color. Disease: Fusarium yellow. 36% stand at harvest, red centers. |
| Belle Glade | Harris-Moran | Medium to long tops, bright red, round radish. Diseases: a lot of Rhizoctonia present. 60% stand at harvest. |
| Crunchy Red | Wiers Farm | Medium tops, bright red color, radish is round to oblong, pure white center, no sign of disease. 75% stand at harvest. |
| Leda | MR | Short tops. Large round radish. A lot of splits and cracks & light red color. Disease: Rhizoctonia, Fusarium yellow, club root. A lot of red centers. |
| NV 3255 | NK | Short to medium size tops, plant stand is very uniform, round, light red radish. Diseases: Fusarium yellow, Rhizoctonia. Some red centers. 53% stand at harvest. |
| Red Devil B | Stokes | Medium tops, plant stand not uniform, bright red, oblong radish. Disease:Fusarium yellow, Rhizoctonia. White centers. 51% stand at harvest. |

| Cultivar | Source | Comments |
|---|---|---|
| Fuego | Siegers | Short tops, dark red, round radish, uniform stand. Disease: Rhizoctonia, pure white centers. 42% stand at harvest. |
| Novired | Stokes | Medium tops. Bright red oblong radish. Disease: Fusarium yellow, Rhizoctonia, club root. 57% stand at harvest. |
| Rave | A & C | Long tops, thick neck on tops. Early maturity, bright red, oblong radish. Disease: Rhizoctonia (bad), some red centers. 61% stand at harvest. |
| Fuego | NK | Medium tops, bright red oval radish, uniform stand. Diseases: Rhizoctonia, pure white centers. 55% stand at harvest. |
| Cherreette | Siegers | Medium tops, dark red oblong radish. Disease: Rhizoctonia, Fusarium yellow, some red centers. 62% stand at harvest. |
| Fuego | MR | Medium tops, bright red oval tops. Disease: Rhizoctonia, pure white centers. 68% stand at harvest. |
| Fancy Red | Harris-Moran | Very long tops, plant stand was not uniform, bright red oblong radish. Diseases: Fusarium yellow, Rhizoctonia, club root, some red centers. 66% stand at harvest. |
| Red Pak | NK | Very long tops, plant stand not uniform, radish is oblong and light red in color. Disease: Fusarium yellow, some red centers. 52% stand at harvest. |
| Galahad | Stokes | Short tops, round to oblong, light red radish. Disease: Fusarium yellow (bad), pure white centers. 56% stand at harvest. |
| Sora | MR | Medium to long tops, round pink radish. Disease: Rhizoctonia (little), pure white centers. 74% stand at harvest. |
| Red King | Harris-Moran | Long tops, oblong red radish, very uniform plant stand. Disease: Rhizoctonia (bad), a lot of red centers. 60% stand at harvest. |

# BULB ONION CULTIVAR EVALUATION, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Forty cultivars and lines of onions were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Seeds were pre-counted, weighed and placed in coin envelopes prior to field seeding. Seeding was done with a cone planter on April 19. Plots consisted of three rows, 20 feet long, 16 inches between rows. Each entry was replicated four times in a randomized complete block design. Prior to spring planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly disked in. On June 12, an additional 30 units of nitrogen was broadcast and cultivated down. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

| | Rainfall | | Air Temp | Avg. | Max | Min |
|---|---|---|---|---|---|---|
| April | 4.23 | in | April | 51 | 65 | 38 |
| May | 6.87 | in | May | 59 | 71 | 47 |
| June | 4.16 | in | June | 72 | 85 | 60 |
| July | 7.39 | in | July | 74 | 87 | 59 |
| Aug. | 5.28 | in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 | in | Sept. | 65 | 78 | 53 |

Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern and should be noted when evaluating these results.

Certain cultivars and lines showed sufficient promise to justify further trial under Ohio conditions. Included are: HMX 2611, Guardian, Benchmark, XPH 3699, Cache, Paragon, FMX 316W19, FMX 258W19, Superior, HMX 2614.

## Dry Onion Cultivar Evaluation - 1990

| Variety name | Source | Plant stand pl/ft | Bulb Size cm/bulb 8/14 | Bulb Size cm/bulb 9/10 | % Fall Over per plot 8/22 | % Fall Over per plot 9/10 | 50 lb. Bags total/acre | 50 lb. Bags good/acre | Total # good/acre | 50 lb. Bag B/acre | 50 lb. Bag culls/acre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Magna Sweet | A & C | 5.3 | 54 | 72 | 20 | 90 | 782 | 654 | 110811 | 136 | 61 |
| Superior | A & C | 5.9 | 60 | 77 | 25 | 90 | 950* | 706* | 83518 | 53 | 195 |
| Kodiak | HM | 5.6 | 64 | 77 | 3 | 85 | 782 | 590 | 76967 | 38 | 238 |
| HMX 2611 | HM | 4.9 | 69 | 77 | 75 | 95 | 1051* | 846* | 90614 | 85 | 153 |
| HMX 2613 | HM | 3.6 | 67 | 76 | 3 | 50 | 727 | 571 | 60591 | 55 | 158 |
| Hustler | HM | 5.2 | 66 | 76 | 90 | 98 | 715 | 536 | 75875 | 82 | 101 |
| HMX 3634 | HM | 5.3 | 64 | 76 | 20 | 85 | 662 | 386 | 58954 | 34 | 262 |
| HMX 2614 | HM | 2.3 | 66 | 75 | 5 | 80 | 870* | 677 | 93343 | 34 | 167 |
| Guardian | HM | 6.6 | 66 | 75 | 80 | 95 | 903* | 734* | 95527 | 86 | 145 |
| Benchmark | Asgrow | 4.6 | 62 | 75 | 30 | 95 | 775 | 707* | 88430 | 50 | 38 |
| Sweet Sandwich | Asgrow | 4.9 | 66 | 79 | 50 | 80 | 826 | 664 | 85701 | 44 | 122 |
| Garrison | Asgrow | 6.0 | 63 | 74 | 20 | 70 | 745 | 608 | 83517 | 51 | 109 |
| Crusader | Asgrow | 4.8 | 62 | 74 | 3 | 65 | 799 | 691 | 87339 | 50 | 65 |
| XPH 3699 | Asgrow | 5.7 | 66 | 74 | 60 | 90 | 713 | 705* | 92797 | 59 | 66 |
| Spartan Banner 80 | Asgrow | 5.3 | 64 | 76 | 10 | 50 | 779 | 657 | 89522 | 87 | 87 |
| Cache | Asgrow | 5.3 | 70 | 82 | 4 | 50 | 1120* | 759* | 87339 | 77 | 161 |
| Norstar | Stokes | 3.4 | 70 | 74 | 95 | 98 | 724 | 624 | 77513 | 48 | 90 |
| Krumrey Banner | Krumrey | 4.8 | 62 | 74 | 7 | 50 | 778 | 638 | 64412 | 70 | 97 |
| Krumrey Douning 90 | Krumrey | 6.2 | 67 | 75 | 7 | 50 | 605 | 440 | 57316 | 52 | 115 |
| MR 920 | MR | 5.3 | 66 | 74 | 10 | 70 | 800 | 689 | 94981 | 52 | 55 |
| MR 970 | MR | 5.3 | 68 | 75 | 50 | 95 | 924* | 652 | 57862 | 69 | 58 |
| Paragon | MR | 5.3 | 69 | 76 | 50 | 95 | 715 | 769* | 76967 | 57 | 3 |
| Norstar | Takii | 5.5 | 65 | 77 | 95 | 95 | 641 | 508 | 76421 | 62 | 102 |
| FMX 360W1 | FM | 4.7 | 66 | 76 | 40 | 80 | 693 | 433 | 67687 | 87 | 179 |
| FMX 396W1 | FM | 5.3 | 65 | 74 | 20 | 70 | 804 | 706* | 100439 | 55 | 57 |
| FMX 386W1 | FM | 5.0 | 65 | 74 | 50 | 90 | 670 | 599 | 83518 | 79 | 67 |
| FMX 356W1 | FM | 5.3 | 65 | 76 | 60 | 95 | 726 | 526 | 84609 | 58 | 135 |
| North Star | FM | 6.1 | 67 | 75 | 75 | 98 | 765 | 648 | 102077 | 96 | 67 |
| Columbia | FM | 5.2 | 67 | 77 | 90 | 100 | 750 | 577 | 80242 | 53 | 87 |
| FMX 316W19 | FM | 4.9 | 67 | 80 | 7 | 85 | 954* | 763* | 85155 | 23 | 173 |

Dry Onion Cultivar Evaluation - 1990 (cont.)

| Variety name | Source | Plant stand pl/ft | Bulb Size cm/bulb 8/14 | 9/10 | % Fall Over per plot 8/22 | 9/10 | 50 lb. Bags total/acre | 50 lb. Bags good/acre | Total # good/acre | 50 lb. Bag B/acre | 50 lb. Bag culls/acre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FMX 258W19 | FM | 5.7 | 66 | 78 | 4 | 75 | 956* | 640 | 68233 | 51 | 163 |
| Brahma | SS | 5.9 | 66 | 77 | 50 | 85 | 808 | 611 | 78605 | 73 | 157 |
| Valient | SS | 4.7 | 67 | 76 | 15 | 75 | 832* | 661 | 74238 | 23 | 157 |
| Paragon | SS | 6.2 | 68 | 73 | 70 | 85 | 680 | 585 | 80788 | 52 | 70 |
| Sunex 1492 | SS | 5.6 | 66 | 75 | 4 | 70 | 897* | 817* | 115724 | 73 | 61 |
| Capable | SS | 5.1 | 65 | 75 | 90 | 95 | 745 | 587 | 89522 | 95 | 69 |
| Prevailer | Siegers | 2.5 | 63 | 75 | 5 | 20 | 488 | 426 | 52949 | 38 | 39 |
| XPH 3370 | Asgrow | 5.8 | 67 | 76 | 70 | 100 | 667 | 584 | 88430 | 82 | 21 |
| XPH 3243 | Asgrow | 5.9 | 69 | 73 | 85 | 100 | 568 | 458 | 63320 | 64 | 93 |
| Flame | Asgrow | 5.7 | 66 | 74 | 40 | 95 | 782 | 604 | 92797 | 88 | 100 |
| LSD | | | 3 | 2 | -- | --- | 261 | 213 | 26354 | 27 | 101 |

## POTATO SEED PIECE SELECTION STUDY FOR OHIO POTATO GROWERS

**Richard Hassell, Dave Kelly and Gene Wittmeyer**

Six cultivars were selected for this study based upon their vigor, maturity, and previous growth performance in Ohio. This study was conducted at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio (organic soils).

Potato seed was cut on May 17 and 18. Cutting was done in such a way as to insure at least one eye was visible on each piece selected, additional eyes were not recorded. Position of the cut was strictly done on a visual setting as to the apical, lateral, and basal divisions of the tuber. Planting was done on May 21, with a two-row precision Holland potato planter. Each entry was replicated six times in a randomized complete block design. Each plot consisted of two 25-foot rows, 32 inches between rows, 12 inches between seed piece. Prior to planting, the field received 800 lbs per acre of 17-17-17 broadcast and lightly incorporated, no other fertilizer was added. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

| Rainfall | | Air Temp | Avg. | Max | Min |
|---|---|---|---|---|---|
| April | 4.23 in | April | 51 | 65 | 38 |
| May | 6.87 in | May | 59 | 71 | 47 |
| June | 4.16 in | June | 72 | 85 | 60 |
| July | 7.39 in | July | 74 | 87 | 59 |
| Aug. | 5.28 in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 in | Sept. | 65 | 78 | 53 |

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern and should be noted when evaluating these results.

From this preliminary study it appears that there is some type of apical dominance taking place in the seed tuber, especially in some of the newer released lines. Further and more detailed studies are needed to further evaluate this phenomenon.

**Influence of Potato Seed Piece Selection on Subsequent Plant Emergence; Planted May 21, 1990.**

| Seed Piece selection | % Plant Emergence | | |
|---|---|---|---|
| | June 11 | June 18 | June 25 |
| Apical | 77.83 | 90.42 | 94.00 |
| Lateral | 40.58 | 55.17 | 60.25 |
| Basal | 37.92 | 60.08 | 65.92 |
| LSD | 4.07 | 3.83 | 4.37 |

| Variety name | Seed Piece selection | % Plant Emergence June 11 | June 18 | June 25 |
|---|---|---|---|---|
| Superior | apical | 69.50 | 97.50 | 92.00 |
| | lateral | 36.00 | 54.00 | 61.00 |
| | basal | 35.50 | 45.50 | 52.00 |
| *MS700-70 | apical | 82.50 | 93.50 | 96.50 |
| | lateral | 40.50 | 57.50 | 69.50 |
| | basal | 47.50 | 71.50 | 76.00 |
| *NY81 | apical | 78.50 | 83.50 | 93.00 |
| | lateral | 31.50 | 37.50 | 41.00 |
| | basal | 29.50 | 50.00 | 54.50 |
| Conastoga | apical | 90.50 | 100.00 | 100.00 |
| | lateral | 62.50 | 78.00 | 81.00 |
| | basal | 43.50 | 63.50 | 73.50 |
| *Norwis | apical | 78.00 | 93.00 | 96.00 |
| | lateral | 58.00 | 74.50 | 78.50 |
| | basal | 47.00 | 82.50 | 86.00 |
| *Landglade | apical | 68.00 | 85.00 | 86.50 |
| | lateral | 16.00 | 29.50 | 30.50 |
| | basal | 24.50 | 47.50 | 53.50 |

**Influence of Potato Seed Piece Selection on Subsequent Yields. Planted May 21; Harvested Sept. 17.**

| Seed Piece selection | Marketable cwt/acre | B Size cwt/acre | Cull cwt/acre | Total cwt/acre |
|---|---|---|---|---|
| Apical | 277 | 30 | 59 | 354 |
| Lateral | 225 | 23 | 53 | 291 |
| Basal | 235 | 24 | 62 | 311 |
| LSD = 11.02 | 36 | 5 | NS | 35 |

| Variety Name | Seed Piece selection | Marketable cwt/acre | B Size cwt/acre | Cull cwt/acre | Total cwt/acre |
|---|---|---|---|---|---|
| Superior | apical | 224 | 23 | 74 | 321 |
| | lateral | 254 | 24 | 64 | 382 |
| | basal | 200 | 15 | 74 | 289 |
| MS700-70 | apical | 243 | 40 | 40 | 323 |
| | lateral | 268 | 22 | 51 | 381 |
| | basal | 256 | 26 | 60 | 342 |
| *NY81 | apical | 268 | 46 | 39 | 353 |
| | lateral | 183 | 32 | 31 | 246 |
| | basal | 226 | 46 | 32 | 304 |
| Conastoga | apical | 268 | 31 | 82 | 381 |
| | lateral | 209 | 26 | 43 | 278 |
| | basal | 168 | 27 | 76 | 271 |
| *Norwis | apical | 349 | 18 | 59 | 426 |
| | lateral | 270 | 20 | 70 | 360 |
| | basal | 300 | 16 | 58 | 374 |
| *Landglade | apical | 308 | 21 | 60 | 389 |
| | lateral | 165 | 12 | 57 | 234 |
| | basal | 259 | 14 | 70 | 343 |

## LANDGLADE

**BASAL -** 35% large to very large tubers, 10-15% are small, remainder are medium, 10% larger tubers having growth cracks, trace of misshapened, trace of irregular surface, very little second growth, good response.

**LATERAL -** 50% large to very large tubers, 5% small, remainder are medium, some growth cracks, second growth is a problem, misshapened, irregular surface especially on large tubers, many large tubers.

**APICAL -** 20% large but not excessive, 20% on small side, balance will be medium, 5% second growth, some irregular surface but not as serious as some plots, no growth cracks, 10% of tubers are misshapened.

## NORWIS

**BASAL -** 30% large to very large, 15% small, balance are medium size, no growth cracks, no second growth, trace of misshapened, irregular surface on medium size as well as large tubers.

**LATERAL -** 40% large with some tubers excessively large, 5% small, balance will be medium, no growth cracks, no second growth, 5% misshapened, irregular surface on large tubers is serious, even present on smaller tubers.

**APICAL -** 30% large with few excessively large tubers, 10% small tubers, balance are medium size, no growth cracks, no second growth, irregular surface on large tubers, trace of misshapened primarily on large tubers.

## CONASTOGA

**BASAL -** 10% large with few excessively large, 20% small, balance would be medium, 10% of tubers misshapened, 5% second growth, trace of growth cracks, irregular surface.

**LATERAL -** 25% large with few excessively large, 10% small, balance would be medium size, 5% of tubers showing second growth, trace of growth cracks, 10% of misshapened, irregular surface, grade out would not be good.

**APICAL -** 10% large but very few excessively large, 10% small, balance would be medium, no growth cracks, 5% second growth, irregular surface even on small tubers, 10% misshapened, promising.

## NY81

**BASAL -** 5% large with few (very few) excessively large, 15% small, balance will be medium, no growth cracks and no second growth, large tubers tend to have irregular appearance, but good appearance in general, should be good gradeout.

**LATERAL -** 15% large but not excessively large, 15% small, remainder are medium size, no second growth, no growth cracks, trace of irregular surface.

**APICAL -** 15% small, balance would be medium size tubers, no growth cracks, no second growth, grade out should be excellent.

## MS700-70

**BASAL -** 25% large to very large, 15% small, balance are medium, trace of misshapened, 5% of tubers with second growth, trace of growth cracks, irregular surface.

**LATERAL -** 10% large, 5% small, balance would be medium, no second growth, no growth cracks, irregular surface, trace of misshapened, would grade good.

**APICAL -** 20% small, 15% large but not excessively large, balance would be medium size, trace of second growth, trace of misshapened, no growth cracks, grade out seems to be excellent.

## SUPERIOR

**BASAL -** 40% large, 5% small, balance would be medium, trace of second growth, no growth cracks, irregular surface in large tubers, trace of misshapened, may have good grade out.

**LATERAL -** 30% large with very few excessively large tubers, 5% small, balance will be medium, 5% second growth, irregular surface on larger tubers, 5% misshapened.

**APICAL -** 25% large with no excessively large, 15% small, balance would be medium, 5% growth cracks, 5% second growth, trace of misshapened, irregular surface especially on large tubers.

# CELERY CULTURAL AND DISEASE EVALUATION TRIAL FOR MUCK SOILS IN NORTHERN OHIO, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Twenty-six cultivars and lines of celery were evaluated in a replicated trial at the Muck Crops Branch of the Ohio Agricultural Research and Development Center and Wiers Farm, Inc., near Willard, Ohio.

Seeds were sown in Todd planter flats number 080A on March 5. Flat thinning and transplanting took place April 2. Greenhouse practices consisted of: soilless mix (Metro Mix 215), continuous feed program (20-20-20) 200 ppm first two weeks; 400 ppm last four weeks, air temperature 70° day, 65° night, pH adjusted well water 5.6 with phosphoric acid 135 ppm phosphorus. These celery plants were then transplanted in the field April 25 using an Old Maid Holland two-row transplanter. Plots consisted of two rows 20 feet long, 32 inches between rows, six inches between plants. Each entry was replicated six times in a randomized complete block design. Prior to planting, the field received 800 lbs per acre of 17-17-17 broadcast and lightly incorporated. Four and six weeks after transplanting an additional 30 units of nitrogen was side-dressed. Grower fertilizer practices are not disclosed.

Field evaluations were taken on a continuous basis with the final evaluation enclosed. Standard practices of weed, insect, and disease control were used and no serious problems occurred.

| Rainfall | | Air Temp | Avg. | Max | Min |
|---|---|---|---|---|---|
| April | 4.23 in | April | 51 | 65 | 38 |
| May | 6.87 in | May | 59 | 71 | 47 |
| June | 4.16 in | June | 72 | 85 | 60 |
| July | 7.39 in | July | 74 | 87 | 59 |
| Aug. | 5.28 in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 in | Sept. | 65 | 78 | 53 |

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Water damage was a constant concern and should be noted when evaluating these results.

Certain cultivars and line showed sufficient promise to justify further trial under Ohio conditions. Included are: A863, Matador, Pickador, Starlet, SR171057. Our grower trial was cut short due to standing water problems, therefore, no grower yields are enclosed in this report.

## CELERY VARIETY EVALUATION, 1990

| Variety name | Variety source | Total Wt. lb/head | Trimmed Wt. lb/head | Petiole Length in/head | Heart Width in/head |
|---|---|---|---|---|---|
| A863 | Martin Rispen | 3.76* | 1.84* | 25.10* | 4.63* |
| Starlet | Royal Sluis | 3.30* | 1.78* | 24.08* | 4.20* |
| Matador 1 | Martin Rispen | 3.31* | 1.57 | 23.40 | 4.23* |
| Pickador | Martin Rispen | 3.29* | 1.56 | 23.68 | 4.07 |
| SR171057 | Sunseed | 3.13* | 1.61* | 24.25* | 3.91 |
| Matador 2 | Martin Rispen | 2.80 | 1.54 | 24.11* | 4.13 |
| RS7124 | Royal Sluis | 3.12 | 1.59 | 23.69 | 4.33* |
| PSR10490 | Peto Seed | 2.95 | 1.66* | 23.06 | 3.94 |
| PSR10390 | Peto Seed | 3.12 | 1.52 | 23.36 | 4.15 |
| PSR10290 | Peto Seed | 2.89 | 1.61 | 29.08* | 3.71 |
| PSR28588 | Peto Seed | 2.91 | 1.48 | 23.75 | 4.17* |
| PSR26387 | Peto Seed | 3.04 | 1.71* | 23.67 | 3.95 |
| SR1701059 | Sunseed | 2.77 | 1.68 | 23.41 | 3.78 |
| SR171064 | Sunseed | 2.87 | 1.59 | 23.23 | 3.54 |
| SR171063 | Sunseed | 2.70 | 1.58 | 23.49 | 4.04 |
| LSD | | .48 | NS | NS | .42 |

## CELERY VARIETY TRIAL 1990
## GREENHOUSE GERMINATION SEEDED

| Cultivar | Source | March 12 (%) | March 16 (%) | March 22 (%) |
|---|---|---|---|---|
| Matador 2 | Martin Rispen | 77 | 84 | 88 |
| Matador 1 | Martin Rispen | 75 | 81 | 88 |
| Picakdor | Martin Rispen | | 19 | 74 |
| Starlet | Royal Sluis | 55 | 78 | 85 |
| SR171057 | Sunseed | | 40 | 53 |
| Sunre 2306 | Sunseed | | 78 | 86 |
| PSR10190 | Peto Seed | | 03 | 81 |
| PSR10290 | Peto Seed | | 01 | 87 |
| RS 7124 | Royal Sluis | | 61 | 42 |
| Sunex 2304 | Sunseed | | 65 | 42 |
| SR171059 | Sunseed | | 33 | 57 |
| SR171063 | Sunseed | | 52 | 71 |
| SR171064 | Sunseed | | 40 | 63 |
| Sunre 2306 | Sunseed | | 57 | 82 |
| PSR28588 | Peto Seed | | 01 | 21 |
| PSR26387 | Peto Seed | | 00 | 86 |
| PSR10490 | Peto Seed | | 00 | 75 |
| PSR10390 | Peto Seed | | 00 | 37 |
| PSR28588 | Peto Seed | | 00 | 14 |

Seeded: March 5
Transplanted: April 25
Harvested: July 30

## CELERY VARIETY TRIAL EVALUATIONS 1990
## FUSARIUM RESISTANT AND SOME TOLERANCE TYPES

1. SR171102 (Sunseed) - Shows some resistance, but not enough to warrant production.

2. Pickador (Martin Rispens) - Shows total resistance to fusarium, very open plant, dark green color, not brittle, and smooth ribbed.

3. SR171075 (Sunseed) - Shows some tolerance, but not enough to warrant production.

4. Sunre 2306 (Sunseed) - Shows some tolerance, but not enough to warrant production.

5. PSR26387 (Peto Seed) - Shows total resistance. A lot of off types exist, many suckers.

6. Matador 2 (Martin Rispens) - Shows total resistance, few suckers, a lot of stem cracking. Some discoloration in butt. Heavy heart.

7. SR171063 (Sunseed) - Shows complete resistance, a lot of suckers, has little heart, rough ribbed. Did not make size.

8. PSR28588 (Peto Seed) - Shows total resistance. Discoloration in butt, extremely brittle and no suckers.

9. PSR26387 (Peto Seed) - Shows some tolerance, but not enough to warrant production. Many suckers, rough ribbed, a lot of cracking and no real heart.

10. SR171057 (Sunseed) - Shows total resistance. Little suckering, some cracking and petiole very thick.

11. SR171059 (Sunseed) - Shows total resistance. Very few suckers, short pedicels, pointed butt, showing a lot of seeding.

12. Matador (Martin Rispens) - Shows total resistance. A lot of internal suckering, some discoloration in butt, a lot of cracking. Smooth ribbed celery.

13. A863 (Martin Rispens) - Shows total resistance. Very tall, but not full hearted. Smooth ribbed celery. Size questionable.

14. SR171074 (Sunseed) - Shows some tolerance, but not enough for market.

15. Starlet (Royal Sluis) - Shows total resistance. Uniform, extremely brittle. Smooth ribbed celery.

16. PSR10290 (Peto Seed) - Shows total resistance. Wild looking, a lot of suckers and very brittle.

17. SR171064 (Sunseed) - Shows total resistance. Uniform, little suckering, some discoloration in butt and some stem cracking.

18. RS 7124 (Royal Sluis) - Shows total resistance. Few suckers, little stem cracking, some brittleness, smooth ribbed celery.

19. SR171098 (Sunseed) - Shows moderate tolerance.

20. Sunre 2306 (Sunseed) - Shows tolerance, but not enough for market.

21. PSR10190 (Peto Seed) - Either dead or 100% resistance, very few suckers and little cracking.

22. PSR10390 (Peto Seed) - Shows complete resistance, wild looking, and few suckers.

23. PSR10490 (Peto Seed) - Shows total resistance. Extreme cracking, brittle and rough ribbed.

24. SR17325 (Sunseed) - Shows some tolerance, but not enough for fresh market.

25. PSR26387 (Peto Seed) - Shows some tolerance, but not acceptable for market.

26. SR171101 (Sunseed) - Shows some tolerance, but not acceptable for market.

## CELERY VARIETY TRIAL 1990
## DEAD PLOTS

1. SR171327 (Sunseed)
2. Sunex 2305 (Sunseed)
3. Sunex 2304 (Sunseed)
4. Florida 683 (Martin Rispens)
5. Utah 52-70H (Martin Rispens)
6. SR171103 (Sunseed)
7. SR171101 (Sunseed)
8. SR17325 (Sunseed)
9. SR171080 (Sunseed)
10. SR17110 (Sunseed)
11. SR171102 (Sunseed)
12. SR171098 (Sunseed)
13. SR171326 (Sunseed)
14. SR171328 (Sunseed)
15. SR171074 (Sunseed)
16. SR171081 (Sunseed)
17. SR171075 (Sunseed)

## CELERY VARIETY TRIAL 1990
## TOLERANCE

1. Sunre 2306 (Sunseed)
2. PSR10190 (Peto Seed)

# FOLIAR FEED STUDY, 1990

**Richard Hassell**
**Muck Crops Branch/OARDC**

Three companies participated in the study with the following crops being evaluated: radishes, lettuce, parsley, collards, green onions and celery. The experiment was conducted at the Muck Crops Branch of the Ohio Agricultural Research and Development Center near Willard, Ohio.

Plants were established by direct field seeding of radish, lettuce, parsley, collards, green onions and transplants of celery. Rates and spacings were based on standard grower practices.

All chemicals were applied as a foliar feed only. All rates and application times were decided by the companies themselves. Each treatment was replicated six times in a randomized complete block design. Prior to planting, the field received 800 lb per acre of 17-17-17 broadcast and lightly incorporated. Standard practices of weed, insect, disease control were used and no serious problems occurred.

| Rainfall | | Air Temp | Avg. | Max | Min |
|---|---|---|---|---|---|
| April | 4.23 in | April | 51 | 65 | 38 |
| May | 6.87 in | May | 59 | 71 | 47 |
| June | 4.16 in | June | 72 | 85 | 60 |
| July | 7.39 in | July | 74 | 87 | 59 |
| Aug. | 5.28 in | Aug. | 72 | 87 | 60 |
| Sept. | 3.37 in | Sept. | 65 | 78 | 53 |

Additional weather information is available upon request.

The summer was characterized by below normal temperatures and above normal amounts of rainfall during most of the growing season. Additional plantings were attempted, but the wet weather halted their progress. Water damage was a constant concern and should be noted when evaluating these results.

There appeared to be no significant increases in yields with any of the treatments. It should be noted that this is only one year's worth of data, therefore, no conclusive can be made.

Influence of foliar feed application on subsequent yields of radish. (Harvested 8/2/90)

| Foliar Treatment | Source | Application time | Rate acre | #Good pt/ft | #Bad pt/ft | Good Tip wt (g/ft) | Good Bottom wt (g/ft) | Total Bad Wt. (g/ft) |
|---|---|---|---|---|---|---|---|---|
| Check | | ---- | ---- | 9.0 | 12.9 | 62.0 | 168.1 | 107.5 |
| Foliar Feed II | Loveland | weekly | 1 qt | 8.3 | 12.9 | 112.9 | 217.5 | 112.3 |
| Foliar Feed II | Loveland | weekly | 1 qt | 11.3 | 10.8 | 145.9 | 136.7 | 93.0 |
| + LI 700 | | weekly | 1 qt | | | | | |
| Black Label | Response | weekly | 1/4 pt | 9.2 | 11.3 | 102.6 | 151.6 | 102.2 |
| Black Label | Response | weekly | 1/2 pt | 5.1 | 13.9 | 56.6 | 91.9 | 107.1 |
| Black Label | Response | weekly | 1 pt | 8.6 | 12.6 | 96.2 | 141.1 | 109.4 |
| Black Label | Response | weekly | 1 qt | 9.5 | 13.3 | 107.9 | 130.9 | 113.0 |
| Black Label | Response | weekly | 2 qt | 8.1 | 12.3 | 119.0 | 128.5 | 105.9 |
| LSD | | | | 2.3 | 2.2 | 31.7 | NS | NS |

Seeded: July 5, 1990
Seed Rate: 10 seeds/ft, 9" between rows, 5 rows per plot, 6 reps/treatment
Spray Dates: July 13, July 20, July 27
Sprayer: High pressure sprayer, 50 PSI, 50 gal/acre, 2 mph

**Influence of foliar feed application on subsequent yields of Lettuce. (Harvested 8-30-90)**

| Foliar treatment | Source | Appl. time | Appl. rate | Boston fr.wt. gr/head | Romaine fr.wt. gr/head | Leaf fr.wt. gr/head |
|---|---|---|---|---|---|---|
| Nutra Phos ZMC Sorba Spray CaB | Leffingwell | biweekly* | 5 lb 1 qt | 644 | 841 | 708 |
| Foliar Feed II | Loveland | weekly | 1 qt | 640 | 864 | 575 |
| Foliar Feed II + LI 700 | Loveland | weekly | 1 qt | 483 | 863 | 535 |
| Black Label | Response | weekly | .25 pt | 420 | 854 | 419 |
| Black Label | Response | weekly | .50 pt | 506 | 643 | 501 |
| Black Label | Response | weekly | 1 pt | 513 | 805 | 365 |
| Black Label | Response | weekly | 1 qt | 450 | 828 | 457 |
| Black Label | Response | weekly | 2 qt | 554 | 753 | 738 |
| Check | | | | 400 | 668 | 371 |
| LSD | | | | NS | NS | NS |

Seeded: June 14, 1990
Plant Thinning: July 12, 1990
Seed Rate: Seed drop 3", 16" between rows, three rows 20 ft. long, 6 reps/treatment
Spray Dates: July 13*, July 20, July 27*, Aug. 2, Aug. 9*, Aug. 16, Aug. 23*

**Influence of foliar feed application on subsequent yields of parsley. (Harvested 9/4/90).**

| Foliar treatment | Source | Appl. time | Rate acre | Number pl/ft | Fresh Wt. gr/ft |
|---|---|---|---|---|---|
| Nutra Phos 3-15<br>Sorba Spray ZNB | Leffingwell | biweekly* | 2 qt<br>2 qt | 125.25 | 16.75 |
| Foliar Feed II | Loveland | weekly | 1 qt | 71.63 | 9.75 |
| Foliar Feed II<br>+ LI 700 | Loveland | weekly | 1 qt<br>1 pt | 142.25 | 19.61 |
| Black Label | Response | weekly | .25 pt | 110.00 | 15.48 |
| Black Label | Response | weekly | .50 pt | 143.75 | 14.62 |
| Black Label | Response | weekly | 1 pt | 90.88 | 12.06 |
| Black Label | Response | weekly | 1 qt | 103.88 | 13.82 |
| Black Label | Response | weekly | 2 qt | 135.88 | 18.48 |
| Check | ---- | ---- | ---- | 157.88 | 21.92 |
| LSD | | | | NS | NS |

Seeded: June 14, 1990
Seed Rate: 16 lb/acre; 16" between rows, three rows 20 ft. long, 6 reps/treatment
Spray Dates: July 13*, July 20, July 27*, Aug. 2, Aug. 9*, Aug. 16, Aug. 23*, Aug. 30.
Sprayer: High pressure sprayer, 50 psi, 50 gal/acre, 2 mph.

**Influence of foliar feed application on subsequent yields of collards. (Harvested 9/4/90).**

| Foliar treatment | Source | Appl. time | Rate acre | Number pl/ft | Fresh Wt. gr/ft |
|---|---|---|---|---|---|
| Nutra Phos 3-15 Sorba Spray ZNB | Leffingwell | biweekly* | 3 lb<br>1 qt | 11.90 | 692.45 |
| Foliar Feed II | Loveland | weekly | 1 qt | 9.58 | 563.50 |
| Foliar Feed II + LI 700 | Loveland | weekly | 1 qt<br>1 pt | 11.78 | 694.00 |
| Black Label | Response | weekly | .25 pt | 12.33 | 681.63 |
| Black Label | Response | weekly | .50 pt | 10.18 | 597.25 |
| Black Label | Response | weekly | 1 pt | 10.95 | 636.75 |
| Black Label | Response | weekly | 1 qt | 9.98 | 596.25 |
| Black Label | Response | weekly | 2 qt | 11.70 | 660.50 |
| Check | ---- | ---- | ---- | 12.25 | 703.53 |
| LSD | | | | 01.17 | 76.07 |

Seeded: June 14, 1990
Seed Rate: 10 seed/ft., 16: between rows, three rows 20 ft. long, 6 reps/treatment.
Spray Dates: July 13*, July 20, July 27*, Aug. 2, Aug. 9*, Aug. 16, Aug. 23*, Aug. 30.
Sprayer: High pressure sprayer, 50 psi, 50 gal/acre, 2 mph.

**Influence of foliar feed application on subsequent yields of green onion. (Harvested 9/10/90).**

| Foliar Treatment | Source | Application time | Rate acre | #Good pt/ft | #Bad pt/ft | Good Tip wt (g/ft) | Good Bottom wt (g/ft) | Total Bag Wt. (g/ft) |
|---|---|---|---|---|---|---|---|---|
| Nutra Phos ZMC Sorba Spray ZNP | Leffingwell | biweekly* | 5 lb 1 qt | 10.05 | 6.30 | 237.50 | 22.90 | 61.25 |
| Foliar Feed II | Loveland | weekly | 1 qt | 13.70 | 3.58 | 404.12 | 17.62 | 67.25 |
| Foliar Feed II + LI 700 | Loveland | weekly | 1 qt 1 pt | 14.32 | 6.28 | 381.75 | 17.75 | 61.25 |
| Black Label | Response | weekly | .25 pt | 11.40 | 5.70 | 292.12 | 31.25 | 64.25 |
| Black Label | Response | weekly | .50 pt | 15.55 | 5.15 | 426.00 | 27.87 | 61.25 |
| Black Label | Response | weekly | 1 pt | 11.77 | 5.70 | 326.25 | 20.50 | 63.00 |
| Black Label | Response | weekly | 1 qt | 13.22 | 4.92 | 303.75 | 28.62 | 60.00 |
| Black Label | Response | weekly | 2 qt | 10.75 | 5.38 | 306.62 | 26.50 | 63.75 |
| Check | ---- | ---- | ---- | 16.47 | 6.10 | 336.50 | 28.35 | 64.75 |
| LSD | | | | NS | NS | 109.79 | NS | NS |

Seeded: June 14, 1990
Seed Rate: 10 lb/acre, 16" between rows, three rows 20 ft. long, 6 reps/treatment.
Spray Dates: July 13*, July 20, July 27*, Aug. 2, Aug. 9*, Aug. 16, Aug. 23*, Aug. 30, Sept. 6*.
Sprayer: High pressure sprayer, 50 psi, 50 gal/acre, 2 mph.

**Influence of foliar feed application on subsequent yields of celery. (Harvested 10/19/90).**

| Foliar treatment | Source | Application time | Rate acre | Total wt. lb/head | Trimmed wt. lb/head |
|---|---|---|---|---|---|
| Nutra Phos ZMC<br>Sorba Spray ZBK | Leffingwell | biweekly* | 2 lb<br>1 qt | 2.72 | 1.94 |
| Foliar Feed II + LI 700 | Loveland | weekly | 1 qt | 2.05 | 1.64 |
| Black Label | Response | weekly | .25 pt | 2.33 | 1.78 |
| Black Label | Response | weekly | .50 pt | 2.70 | 2.04 |
| Black Label | Response | weekly | 1 pt | 2.16 | 1.68 |
| Black Label | Response | weekly | 1 qt | 2.42 | 1.78 |
| Black Label | Response | weekly | 2 qt | 2.50 | 2.02 |
| Check | | ---- | --- | NS | NS |

Seeded: April 27, 1990
Transplanted: July 6, 1990
Plot Design: 6" between plants, 32" between rows, 2 rows 30 ft. long, 6 rep/treatment.
Spray Dates: July 13*, July 20, July 27*, Aug. 2, Aug. 9*, Aug. 16, Aug. 23*, Aug. 30, Sept. 6*, Sep. 13, Sept. 20*, Sept. 27, Oct. 4*, Oct. 11.
Sprayer: High pressure sprayer, 50 psi, 50 gal/acre, 2 mph.

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